



Duke Power Company  
A Duke Energy Company  
McGuire Nuclear Station  
12700 Hagers Ferry Road  
Huntersville, NC 28078-9340

D.M. Jamil  
Vice President

(704) 875-4100

October 25, 2002

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555-0001

Subject: Duke Energy Corporation (DEC)  
McGuire Nuclear Station Units 1 and 2  
Docket Nos. 50-369 and 50-370  
Technical Specification Change  
TS 4.2.1, "Fuel Assemblies"

Attached is McGuire Technical Specification (TS) Section 4.0, "Design Features", page 4.0-1. We request that you please re-issue this page under approved Technical Specification Amendment 197/178 which was issued on November 27, 2000.

On September 22, 1999, TS Amendment 188/169 was issued. Included in this amendment was a change to Section 4.2.1, "Fuel Assemblies" to include ZIRLO<sup>TM</sup> as an acceptable fuel rod cladding material.

TS Amendment 197/178 was prepared prior to the issuance of the 188/169 TS Amendment, and when the 197/178 TS Amendment was issued, ZIRLO<sup>TM</sup> was inadvertently deleted. This correction also affects the License Amendment Request submitted to the NRC on April 18, 2002.

Any questions with respect to this matter should be directed to Norman T. Simms of Regulatory Compliance at (704) 875-4685.

Sincerely,

D.M. Jamil

Attachment

A001

U.S. Nuclear Regulatory Commission  
October 25, 2002  
Page 2

xc w/attachment:

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NRC Senior Resident Inspector  
McGuire Nuclear Station

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Radiation Protection Section  
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U.S. Nuclear Regulatory Commission  
October 25, 2002  
Page 3

bxc w/attachments:

C.J. Thomas  
N.T. Simms  
P.M. Abraham  
G.A. Copp  
K.L. Crane  
J.I. Glenn  
McGuire Master File # 1.3.2.9  
Elliott (EC050)

**ATTACHMENT**

## 4.0 DESIGN FEATURES

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### 4.1 Site Location

The McGuire Nuclear Station site is located at latitude 35 degrees, 25 minutes, 59 seconds north and longitude 80 degrees, 56 minutes, 55 seconds west. The Universal Transverse Mercator Grid Coordinates are E 504, 669, 256, and N 3, 920, 870, 471. The site is in northwestern Mecklenburg County, North Carolina, 17 miles north-northwest of Charlotte, North Carolina.

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### 4.2 Reactor Core

#### 4.2.1 Fuel Assemblies

*either ZIRLO<sup>TM</sup> or* The reactor shall contain 193 fuel assemblies. Each assembly shall consist of a matrix of Zircalloy fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO<sub>2</sub>) as fuel material. Limited substitutions of *ZIRLO<sup>TM</sup>*, zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

#### 4.2.2 Control Rod Assemblies

The reactor core shall contain 53 control rod assemblies. The control material shall be silver indium cadmium (Unit 1) silver indium cadmium and boron carbide (Unit 2) as approved by the NRC.

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### 4.3 Fuel Storage

#### 4.3.1 Criticality

- 4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:
- Fuel assemblies having a maximum nominal U-235 enrichment of 4.75 weight percent;
  - $k_{eff} < 1.0$  if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR;
  - $k_{eff} \leq 0.95$  if fully flooded with water borated to 730 ppm, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR;

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